REMARKS

Claims 1 – 25 are pending; claims 8 – 16 are allowed; and claims 1 – 7 and 17 – 25 are rejected.

The applicants' attorney amends claims 1, 10, 16, 17 and 21. Claims 10 and 16 have been amended to overcome the examiner's objections based on informalities. These amendments do not narrow the claims. The applicants' attorney respectfully asserts that claims 1 – 7 and 17 – 31, as amended, are in condition for allowance for the reasons discussed below.

Objection to Claims 10 and 16

The applicants' attorney has amended claims 10 and 16 to overcome the examiner's objections. Claim 10 has been amended to correct the typographical error by replacing "and" with "an". Claim 16 has also been amended to correct the typographical error by inserting "the" between "wherein" and "release".

Rejection of Claims 1 – 7 under 35 U.S.C. §102(b)

The applicants' attorney respectfully asserts that claim 1, as amended, is patentable over U.S. Patents 5,947,572 issued to Chang (Chang) and 6,396,686 issued to Liu et al. (Liu) because each fails to disclose an insertion force generated by a handle that is different than the force one applies to the handle to generate the insertion force.

The applicants' claim 1, as amended recites a handle having a force-developing portion and operable to develop an insertion force at the force-developing portion that is responsive to a force applied to the handle and that is different than the force applied to the handle.

For example, as shown in FIGS. 2, 3, 5A and 5B, and discussed in paragraphs 20 and 23 of the specification, a removable drive 200 includes a handle 202 that can rotate about the axis 300 to insert and withdraw the drive 200 from a bay 400 (FIGS. 5A and 5B) of an electronic system. The handle includes insertion

cams 306 (force-developing portion) for developing an insertion force to complete the insertion of the drive 200 into the bay 400, and a front member 210 (FIG. 2) that one can push to apply a force to the handle 202 to generate the insertion force. In operation, one applies a force F (FIG. 5A) to the front member 210 to rotate the handle 202 about the axis 300 and move the insertion cams 306 toward an inner front portion 504 (FIGS. 5A and 5B) of the bay 400. After the insertion cams 306 contact the portion 504, the insertion cams 306 stop moving, and continued application of the force F to the front member 210 generates an insertion force at the axis 300 that the handle 202 applies to the drive 200. The insertion force generated is directed at an angle relative to the direction of the applied force F, and can be larger or smaller in magnitude than the force F depending on the location of the axis 300 between the place where the force F is applied and the place where the insertion cams 306 contact the bay 400.

In contrast, Chang fails to disclose an insertion force generated by a handle that is different than the force one applies to the handle to generate the insertion force. Chang discloses a disk-drive sliding case system (shown in FIGS. 1A and 4 but not identified with a reference number) that includes an outer case 10 (FIG. 1A), and an inner case 20 (FIGS. 1A and 4) that houses the disk-drive and that can be inserted into and withdrawn from the outer case 10 to couple the disk-drive to other electronic circuitry. The inner case 20 has a handle 21 to withdraw and insert the inner case 20 from and into the outer case 10, and a face plate 40 that the handle 21 is pivotally mounted to. To insert the inner case 20 (and thus the diskdrive) into the outer housing 10, one can either rotate the handle 21 relative to the face plate 40 or not, and then apply a force to the handle 21 that then transmits the force to the inner case 20 to insert the inner case 20 into the outer case 10. The force that the handle 21 exerts on the inner case 20 has the same magnitude as the force that one applies to the handle 21 to insert the inner case 10 into the outer case 20. Furthermore, the force that the handle 21 exerts on the inner case 20 is applied in the same direction as the force that one applies to the handle 21. Therefore, unlike the applicants' claimed handle, Chang's handle 21 does not generate an insertion force that is different than the force one applies to the handle 21 to insert the inner case 20 into the outer case 10.

Liu also fails to disclose an insertion force generated by a handle that is different than the force one applies to the handle to generate the insertion force. Liu discloses mounting devices 10 (FIG. 1) for mounting a CD-ROM drive 40 (FIGS. 1 and 4) in a cage 52 (FIG. 4) of a computer enclosure 50 (FIG. 4). Each mounting device 10 includes a body 30, a handle portion 39, and a locking portion 392 (FIG. 1) that is inserted into slots 58 (FIG. 4) of the cage 52 to retain the mounting device 10, and thus CD-ROM 40, in the cage 52. To insert the CD-ROM 40 and mounting device 10 into the cage 52, one pushes the handle portion 39 toward the interior of the cage 52 until the locking portion is aligned with a corresponding slot 58 and the handle portion 39 inserts the locking portion 392 into the slot 58. As one applies force to the handle portion 39, the handle portion 39 transmits the force to the body 30, which transmits the force to the CD-ROM 40 to insert the CD-ROM 40 into the cage 52. The force that the handle portion 39 exerts on the body 30 and that the body 30 exerts on the CD-ROM has the same magnitude as the force that one applies to the handle portion 39 to insert the CD-ROM into the cage 52. Furthermore, the force that the handle portion 39 exerts on the body 30 and that the body exerts on the CD-ROM is applied to the CD-ROM 40 in the same direction as the force that one applies to the handle portion 39. Therefore, unlike the applicants' claimed handle, Liu's handle 39 does not generate an insertion force that is different than the force that one applies to the handle 39 to insert the CD-ROM into the cage 52.

Claims 2 – 7, 26 and 27 are patentable by virtue of their dependencies on claim 1 as amended.

Rejection of Claims 17 – 20 under 35 U.S.C. §102(b)

Claim 17 is patentable over Chang for reasons similar to those recited above in support of claim 1 over Chang.

Claims 17 – 20, 28 and 29 are patentable by virtue of their dependencies from claim 17.

Rejection of claims 21 – 25 under 35 U.S.C. §102(e)

The applicants' attorney respectfully asserts that claim 21, as amended, is patentable over U.S. Patent 6,836,406 issued to Weng et al. (Weng) because Weng fails to disclose generating, with a handle, an insertion force that is different than the force one applies to the handle to generate the insertion force.

The applicants' claim 21, as amended, recites generating an insertion force to insert a drive into a drive bay of a computer system. The insertion force is generated by a force-developing portion of a handle of the drive; is in response to a force applied to the handle; and is different than the force applied to the handle.

As shown in FIGS. 2, 3, 5A and 5B, discussed in paragraphs 20 and 23 of the specification, and discussed above in the argument for the patentability of claim 1 over Chang, an example of a method for inserting a removable drive 200 into a drive bay 400 of a computer system includes generating, with a force-developing portion of a handle 202, an insertion force responsive to and different than the force F that is applied to the handle 202.

In contrast, Weng fails to disclose generating, with a handle, an insertion force that is different than the force one applies to the handle to generate the insertion force. Weng discloses a disk array system 20 (FIG. 4) having a disk box 2 that houses a disk drive (not shown). When the disk drive in the box 2 needs to be removed from the array system 20 to be repaired or replaced with a new disk drive, one removes the box 2 from the array system 20. When one wants to add a disk drive in the box 2 to the array system 20, one inserts the box 2 into the array system 20. The box 2 includes a handle 11 to remove and insert the box 2 from and into the system 20, and a pivot 19 that the handle 11 is pivotally mounted to. To insert the box 2 into the array system 20, one can apply a force to the handle 11 that then transmits the force to the box 2 to insert the box 2 into the array system 20. The force that the handle 11 exerts on the box 2 has the same magnitude as the force that one applies to the handle 11 to insert the box 2 into the array system 20. Furthermore, the force that the handle 11 exerts on the box 2 is applied in the same direction as the force that one applies to the handle 11. Therefore, unlike the claimed handle, Weng's handle 11 does not generate an insertion force that is different than the force one applies to the handle 11 to insert the box 2 into the array system 20.

Claims 22 – 25, 30 and 31 are patentable by virtue of their dependencies on claim 21, as amended.

Conclusion

The applicants' attorney respectfully requests the examiner withdraw the rejections of claims 1 – 7 and 17 – 25 in view of applicants' amendments and remarks and issue an allowance for claims 1 – 7 and 17 – 31.

The applicants' attorney also respectfully requests that the examiner call Mr. David Mason (408-447-4046) or Mr. John Janeway (425-455- 5575) if the examiner believes that claims 1 – 7 and 17 – 31, as amended, are not patentable.

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Respectfully submitted,
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